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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/573,830

03/29/2006

Valeria D'Amico

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9912

22852

7590

01/21/2009

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EXAMINER

TRAN, KHAI

ART UNIT

PAPER NUMBER

2611

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/573,830	<b>Applicant(s)</b> D'AMICO ET AL.	
	<b>Examiner</b> KHAI TRAN	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 35-68 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 51-67 is/are allowed.
- 6) ☒ Claim(s) 35-50,68 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/29/2006</u> .   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. The preliminary amendment filed 3/29/2006 has been entered. Claims 1-34 have been cancelled. Claims 35-68 are pending in this Office action.

#### ***Claim Objections***

2. Claim 25 is objected to because of the following informalities: Appropriate correction is required.

Regarding claim 35, line 1, the term "the transfer function" should be changed to --a transfer function--.

The term "the step(s)" in each of the method claims in line 1 should be changed to --a step-- or --steps--, for example: claim 36, line 1, the term "the step" should be changed to --a step--.

#### ***Drawings***

3. The drawings are objected to because the boxes (2a, 2b, 2c, 16, 17 ...) in the Figures are blank. These empty boxes should be labeled.
4. Figures 1-6 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing Figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 101***

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 35-50, 68 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent<sup>1</sup> and

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<sup>1</sup> *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

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recent Federal Circuit decisions<sup>2</sup> indicate that a statutory “process” under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim recites a series of steps or acts to be performed, the claim neither transforms underlying subject matter nor positively ties to another statutory category that accomplishes the claimed method steps, and therefore does not qualify as a statutory process. Method recited in claim 35 including steps of “obtaining first and second channel estimates...”, “combining the first and second” “interpolating the second channel”, “obtaining that final combined channel estimated” ... and responding is of sufficient breadth that it would be reasonably interpreted as a series of steps completely performed mentally, verbally or *without a machine*. The Applicant has provided no explicit and deliberate definitions of “obtaining” to limit the steps to the electronic form of the “method,” and the claim language itself is sufficiently broad to read on a SPE being shown a printout of an paper question about §101, mentally stepping through the §101 analysis, recalling *In re Bilski*, and telling the person who had the question his or her opinion. Furthermore, the claimed invention is directed to non-statutory subject matter. “A method for estimating the transfer function” recited in claim 35 would reasonably be interpreted by one of ordinary skill in the art as software, per se. Moreover, this interpretation is based on the applicant’s original disclosure on page 2, [00027] showing that “the invention also relates to a corresponding system

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<sup>2</sup> *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

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(adapted to be included e.g, in a CDMA receiver) as well as a related computer program product loadable in the memory of at least one computer and including software code portions for performing the steps of the method. Therefore do not qualify as a statutory process.

***Allowable Subject Matter***

8. Claims 51-67 are allowed.

9. The following is a statement of reasons for the indication of allowable subject matter: none of the prior art discloses a system for estimating a transfer function of a transmission channel over which a pilot signal and a data signal are transmitted, the pilot signal comprising sets of known symbols each transmitted over a given time slot, and the data signal comprising dedicated pilot filed comprising respective sets of known symbols each transmitted over a respective slot, comprising: an interpolator module for interpolating the second channel estimates over the basic estimation reference time to produce a number of interpolated second channel estimates over the basic estimation reference time derived from the data signal equal to the number of the first channel estimates over the basic estimation reference time derived from the pilot signal, the combination node being a summation node producing the final combined channel estimates as a sum of the first channel estimates and the interpolated second channel estimates as recited in claim 51.

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***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Huang et al (U.S. Pat. 6,154,443) disclose FFT-based CDMA Rake receiver.

Mochizuki (U.S. Pat. 6,580,764) discloses channel characteristics estimation apparatus.

Miyoshi et al (U.S. Pat. 6,993,308) disclose radio receiving device and radio receiving method.

Maeda et al (U.S. Pat. 7,092,431) disclose receiver, transmitter, communication system, and method of communication.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHAI TRAN whose telephone number is (571) 272-3019. The examiner can normally be reached on 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on (571) 272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KHAI TRAN/  
Primary Examiner, Art Unit 2611

*January 15, 2009*